

REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

New claims 39-44 have been added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 16-44 are now pending in this application. Claims 16-29 have been withdrawn from consideration.

Rejections under 35 U.S.C. § 103

Claims 30, 32, and 33 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Pub. No. 2003/0165744 to Schubert *et al.* (hereafter “Schubert”) in view of U.S. Patent No. 5,865,860 to Delnick (hereafter “Delnick”). This rejection is respectfully traversed.

Schubert teaches an electrode comprising a collector with printed electrode. See Schubert at paragraphs 0038 and 0062. However, as indicated on page 3 of the Office Action, Schubert does not disclose or suggest an electrode layer comprising a plurality of dots, as recited in claim 30. Nor does Schubert disclose or suggest connecting portions, wherein the connecting portions extend from round surfaces of the dots, as recited in claim 30.

Delnick teaches a process for providing an electrode and applying electrolyte to the electrode using an ink-jet printing process. See the abstract of Delnick. Delnick uses the ink-jet printing process to distribute the electrolyte throughout the pore structure of the separator and the electrode by providing a porous structure 204 that includes a first layer 206 as an electrode layer and a second layer 208 as a separator layer. See Delnick at col. 3, lines 37-51;

col. 4, lines 50-61; col. 5, lines 20-35; and Figure 2. Delnick states that the electrolyte can be deposited over an upper surface 207 of the separator 208, such as by ink-jet printing, to fill the separator 208 and the electrode layer 206 with electrolyte solution 216 because the electrolyte percolates down through the pores of the porous structure 204. See Delnick at col. 6, lines 5-24.

The Office argues on page 3 of the Office Action that although Schubert fails to teach that the electrode layer comprises a plurality of connected dots, the skilled artisan could have applied the known technique of Delnick to print the electrode of Schubert and the results would have been predictable. Applicant respectfully disagrees.

Delnick does not disclose or suggest an electrode comprising, among other things, an electrode layer comprising a plurality of dots containing an active material, wherein the dots are spaced apart from one another and the only active material connecting the dots is the connecting portions, as recited in claim 30. Claims 32 and 33 depend from claim 30.

Instead, Delnick discloses that the separator and the active electrode material are printed by a screen or stencil printing process and the electrolyte material is deposited on the separator to fill the separator and the electrode layers with electrolyte solution, with ink-jet printing being a method to deposit the electrolyte solution. See Delnick at col. 4, lines 59-61; col. 5, lines 58-60; and col. 6, lines 5-24.

Thus, Delnick discloses a printing process for active material (screen or stencil printing) that does not provide the features recited in claim 30. Further, Delnick does not disclose or suggest a structure that would result in a plurality of dots containing an active material, wherein the dots are spaced apart from one another and the only active material connecting the dots is the connecting portions, as recited in claim 30. Nor does Delnick disclose or suggest connecting portions, wherein the connecting portions extend from round surfaces of the dots, as recited in claim 30.

For at least the reasons discussed above, the combination of Schubert and Delnick does not render claims 30, 32, and 33 to be unpatentable because the combination of Schubert

and Delnick does not disclose or suggest all of the features of claim 30. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 34 and 35 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schubert in view of Delnick, and further in view of U.S. Patent No. 5,518,841 to Sotomura *et al.* (hereafter “Sotomura”). This rejection is respectfully traversed because claims 34 and 35 dependent from claim 30 and are therefore patentable for at least the same reasons that claim 30 is patentable. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 31 and 36 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schubert in view of Delnick and U.S. 2004/0115522 to Urso *et al.* (hereafter “Urso”). This rejection is respectfully traversed.

Claim 31 recites an electrode comprising, among other things, a collector and an electrode layer which is disposed on the collector, and comprises a plurality of dots containing an active material, each of the dots being connected to adjacent dots by connection portions, wherein the dots are spaced apart from one another and the only active material connecting the dots is the connecting portions, wherein the connecting portions extend from round surfaces of the dots. Claim 36 depends from claim 31.

As discussed above in regard to claim 30, Schubert and Delnick do not disclose or suggest an electrode comprising an electrode layer comprising a plurality of dots containing an active material, each of the dots being connected to adjacent dots by connection portions, wherein the dots are spaced apart from one another and the only active material connecting the dots is the connecting portions. Nor do Schubert and Delnick disclose or suggest connecting portions, wherein the connecting portions extend from round surfaces of the dots, as recited in claim 31.

Urso teaches a battery electrode that has active material in a uniform thickness on the current collector. See Urso at paragraph 0002.

However, Urso fails to remedy the deficiencies of Schubert and Delnick. Therefore, the combination of Schubert, Delnick, and Urso does not render claims 31 and claim 36 to be unpatentable. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 37 and 38 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Schubert in view of Delnick and Urso, and further in view of Sotomura. This rejection is respectfully traversed because Claim 37 and 38 are depend from claim 31 and are therefore patentable for the same reasons that claim 31 is patentable. Reconsideration and withdrawal of this rejection is respectfully requested.

Advisory Action

The Office states in the Advisory Action mailed January 14, 2011 that U.S. Patent No. 6,432,585 to Kawakami *et al.* (hereafter “Kawakami”) provides an electrode material layer which includes dots spaced apart with connecting portions.

Kawakami discloses an electrode structural body 10 which includes a layer 102 of host matrix material particles 101 formed on a surface of a collector 100. See Kawakami at col. 9, lines 32-38, and Figure 1.

Some of the circles depicted in Figure 1 of Kawakami for the layer 102 overlap. However, these connected circles do not also include connecting portions, wherein the connecting portions extend from round surfaces of the dots, as recited in claims 30 and 31. Instead, the circles depicted in the layer 102 of Figure 1 of Kawakami merely overlap without any connecting portions which extend from round surfaces of the circles in Figure 1 to connect the circles. As a result, Kawakami does not disclose or suggest the features of claims 30 and 31 and does not remedy the deficiencies of the references discussed above.

New Claims

New claims 39-44 have been added. Claims 39-44 depend from claims 30 and 31 and are allowable over the prior art for at least the reasons discussed above and for their respective additional recitations.

Conclusion

Applicant submits that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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